

I claim:

1. A disengageable interconnecting flooring system for use in forming a temporary or permanent laminate flooring surface on top of a support structure from individual flooring panels, said system comprising:
  - two or more laminate flooring panels and at least one connector;
  - the flooring panels comprising a top wear surface, a reinforcing substrate material, and a bottom surface for contact with the support structure, said panels comprising four edges having recesses formed therein for receipt of a projection from said connector, said panels also having channels formed in their bottom surfaces shaped for receipt of protrusions from said connector;
  - the connector comprising a base having a projection extending vertically therefrom shaped to be received in a disengageable vertical connected fashion into the recesses in the edges of said panels, said base of said connector further comprising two protrusions extending vertically from either side of the base spaced from the projection, said protrusions shaped to be received in a disengageable horizontal connected fashion into the channels in said bottom surface of said panels, wherein when said panels are connected using the connector, the resultant visible flooring surface consists of only the top wear surface of the panels.
2. The system of claim 1 wherein the thickness of the laminated flooring panels ranges from about .240 inches to about .320 inches.

3. The system of claim 1 wherein the reinforcing substrate material of the panels is selected from the group of materials consisting of medium density fiberboard, high density fiberboard, wood/plastic compositions, woods, ceramics, unfilled plastics, filled plastics, and closed-cell rigid foams, and combinations thereof.
4. The system of claim 1 wherein the connector is composed of a material selected from the group consisting of metals, unfilled plastics, filled plastics, rubbers, ceramics, wood compositions, and combinations thereof.
5. The system of claim 1 wherein the recesses in the edges of the panels extend substantially the entire length of the edges.
6. The system of claim 1 wherein the channels in the panels extend substantially the entire length of the panels.
7. The system of claim 1 wherein the connector is of substantially the same length as at least one edge of one of the panels.
8. The system of claim 1 wherein the projection of the connector extends substantially the entire length of the connector.
9. The system of claim 1 wherein the protrusions extend substantially the entire length of the connector.

1062P2P1

10. A vertically and horizontally interconnecting flooring system for use in forming a flooring surface on top of a support surface, said system comprising:

two or more individual flooring panels having a certain thickness and at least one track;

the flooring panels comprising a top wear surface and a bottom surface for contact with the support surface, said panels having at least three edges with identical recesses formed therein, said first recesses shaped to receive a first connection projection from the track, said panels also having second recesses located along the bottom surface of each panel open in the direction away from the top surface for receipt of a second connection projection from the track;

the track comprising a base, a first connection projection, and a second connection projection, said first connection projection connected to and extending vertically a distance from the base and shaped to be received in the first recesses of the panels to form a vertical connection between the panels when two or more panels are engaged at their edges, said second connection projection connected to and extending vertically a distance from the base and shaped to be received in the second recesses of the panels to form a horizontal connection between the panels when two or more panels are engaged at their edges;

the distance from the base of the track to an uppermost vertical portion of the first projection is less than the distance between the top wear surface and the bottom surface of the panel such that said first and second connections between the panels form upon interconnection a flooring surface consisting of only the top wear surface of the panels.

11. The system of claim 10 wherein the thickness of a panel ranges from about .240 inches to about .320 inches.
12. The system of claim 10 wherein the distance from the base of the track to the uppermost vertical portion of the first projections is less than about .240 inches.
13. The system of claim 10 wherein the first recesses extend substantially the entire length of the panel edges.
14. The system of claim 10 wherein the second recesses extend substantially the entire length of the panels.
15. The system of claim 10 wherein the first connection projection includes a portion extending parallel to and spaced from the base of the track and extends for substantially the entire length of the track.
16. The system of claim 10 wherein the second connection projection is in the shape of a node extending substantially the entire length of the track from the base spaced from the first connection projection.
17. The system of claim 10 wherein the second connection projection comprises two nodes spaced on either side of the first connection projection extending from the base for substantially the entire length of the track.
18. The system of claim 10 wherein the flooring panel further comprises a substrate reinforcing material in between the top wear surface and the backing layer comprised of a material selected from the group consisting of medium to high density fiber board, particle board, woods, plastic/wood compositions, unfilled plastics, filled plastics, ceramics, and combinations thereof.

19. The system of claim 10 wherein in the track is manufactured from a material selected from the group consisting of woods, ceramics, metals, rubbers, filled plastics, and unfilled plastics.

00000000000000000000000000000000

20. A disengageable interconnecting flooring system for use in forming a temporary or permanent flooring surface on top of a support structure from individual flooring panels, said system comprising:

two or more flooring panels and at least one connector track;

the flooring panels comprising a top wear surface and a bottom surface for contact with the support structure, the panels being multidirectional and comprising at least three edges wherein all edges have identical recesses formed therein for receipt of at least one projection from the connector track;

the connector track comprising a base and a projection extending vertically from the base, said projection shaped to be received in a disengageable vertical connected fashion into the grooves of at least two panels to form a flooring surface completely consisting of the top wear surface of the panels.

21. The system of claim 20 wherein the projection is further shaped to be received in a disengageable horizontal connected fashion into the grooves of said panels.

22. The system of claim 20 wherein the base of the connector track further comprises at least one protrusion extending vertically therefrom, and the panels further comprise at least one channel in their bottom surface running parallel to and spaced from the edges and shaped to receive said protrusion in a disengageable horizontal connected fashion.

23. The system of claim 20 wherein the recesses extend substantially the entire length of the panels.

24. The system of claim 22 wherein the channels extend substantially the entire length of the bottom surface of the panels.

25. The system of claim 20 wherein the projection extends substantially the entire length of the connector track.
26. The system of claim 22 wherein the projection extends substantially the entire length of the connector track.
27. The system of claim 22 wherein the protrusion extends substantially the entire length of the connector track.
28. The system of claim 22 wherein the projection further comprises a recess therein, and the panels are shaped to engage said recess to form a horizontal connection between two adjacent panels upon interconnection of the same.
29. The system of claim 20 wherein the distance from the base of the connector track to the top of the projection of the connector track is less than the distance from the bottom surface to the top wear surface of the panels.
30. The system of claim 20 wherein the projection extends directly from the base of the connector track.
31. The system of claim 20 wherein the projection angularly extends directly from the base of the connector track.
32. The system of claim 20 wherein the projection is connected to the base of the connector track *via* a support extending vertically from the base.
33. The system of claim 32 wherein the projection angularly extends from the support extending from the base.
34. The system of claim 33 wherein the projection further comprises a node extending therefrom.

35. The system of claim 20 wherein the base of the connector track is shaped to rest on the support structure.
36. The system of claim 20 wherein the base of the connector track further comprises recesses therein, and the edges of the panels are shaped to be received in a disengageable horizontal connected fashion into the recesses of the base of the connector track.
37. The system of claim 36 wherein the base of the connector track is shaped to rest on the support structure.
38. The system of claim 20 wherein the projection of the connector track further comprises recesses therein, and the edges of the panels are shaped to be received in a disengageable horizontal connected fashion in the recesses of said projection.
39. The system of claim 38 wherein the base of the connector track is shaped to rest on the support structure.

1062P2P1-000050

40. A disengageable interconnecting decorative laminate flooring system for application to an existing floor surface without the use of adhesives or traditional fastening devices, said system comprising:
- a plurality of individual floor panels and a plurality of individual connectors;
  - the individual floor panels having a top decorative wear surface, a bottom surface, and comprising edges between the top and bottom surfaces, each edge having identical receivers located therein;
  - the connectors comprising rails of substantially the same lengths as the edges of said panels, said rails each having a base and a vertically extending projection from said base, said projection being shaped for insertion into the receivers of the panels for disengageable vertical and horizontal interconnection of the individual flooring panels at their edges, wherein when the panels are interconnected using the connectors, the visible resultant flooring surface only consists of the top decorative wear surface, and no portion of the connector forms a part of the visible flooring surface.
41. The system of claim 40 wherein the receivers in the edges of a panel comprise grooves.
42. The system of claim 40 wherein the bottom surface of the panels further comprise channels therein.
43. The system of claim 40 wherein the bases of the connectors are designed to rest on the support structure upon interconnection of at least two of the floor panels.

44. The system of claim 42 wherein the bases of the rails further comprise two more projections extending vertically therefrom, the two more projections are smaller than said first projection, spaced apart, and on either side of said first projection for engagement with the channels in the bottom surface of the panels upon connection of two adjacent panels.
45. The system of claim 40 wherein the base of the rails is not designed to rest on the support structure upon interconnection of at least two floor panels.
46. The system of claim 40 wherein the projection from the bases of the connectors further comprise recesses therein.
47. The system of claim 41 wherein the bases of the connectors further comprise recesses therein.

1062P2P1-00000000

48. A disengageable connector for vertically and horizontally interconnecting individual flooring panels with identical edges to form a permanent or temporary laminate flooring surface on top of a support structure, said connector comprising:

a base and a projection extending vertically from said base, said projection having top and bottom portions and consisting of identical right and left halves, the top portion of each half comprising identical extensions extending horizontally in opposite directions equal distances substantially parallel to, separate from and above said base, and optionally, two additional protrusions extending vertically from said base, said two protrusions spaced apart from said projection and being located on either side of said projection.

49. The connector of claim 48 wherein the base is not designed to be in contact with the support structure upon interconnection of flooring panels.

50. The connector of claim 48 wherein the base is designed to be in contact with the support structure upon interconnection of flooring panels.

51. The connector of claim 48 wherein the protrusions vertically extend a distance less than the projection.

52. The connector of claim 48 wherein the connector is manufactured from metal.

53. The connector of claim 48 wherein the connector is manufactured from plastic.

54. The connector of claim 48 wherein the right and left halves of the projection further comprise recesses therein.

55. The connector of claim 48 wherein the base further comprises two recesses formed therein located between the protrusions and the projection.

- Benz
- 56. The connector of claim 48 wherein said connector is an elongated track.
  - 57. The connector of claim 48 wherein the projection extends substantially the entire length of the connector.
  - 58. The connector of claim 48 including protrusions wherein the protrusions extend substantially the entire length of the connector.

Add E1  
Add Z1

HOU03:791965.1

- RECORDED - DECEMBER 1960
59. A multidirectional individual laminated flooring panel for use in forming on a support surface a flooring surface comprised of at least two panels disengageably interconnected horizontally and vertically, said panels comprising:
- a top surface, a bottom surface for contact with the support structure, and edges therebetween, the top surface comprising a decorative wear surface, all edges comprising identical grooves extending substantially the entire length of the edges, and the bottom surface comprising identical channels formed therein and open away from the top surface, said channels being parallel to, spaced from, and extending substantially the entire length of said edges.
60. The panels of claim 59 further comprising a middle substrate reinforcing layer between the top surface and the bottom surface.
61. The panels of claim 60 wherein the middle substrate reinforcing layer is manufactured from a material selected from the group consisting of medium density fiber board, high density fiber board, woods, filled plastics, unfilled plastics, ceramics, fibers, rigid urethane foams, and combinations thereof.
62. The panels of claim 59 wherein the distance from the bottom surface to the top surface ranges from about .240 inches to about .320 inches.